

**Activity Overview**

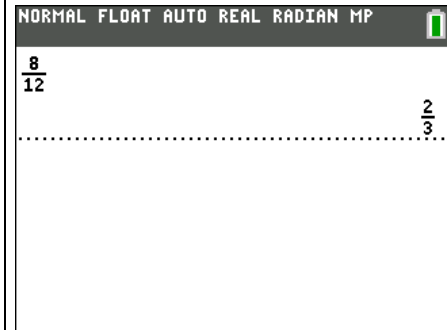
In this activity, students explore the meaning and purpose of equivalent fractions. They also practice writing fractions that meet a given criteria.

**Topic: Numbers and Operations**

- Compute fluently and make reasonable estimates
- Select appropriate methods and tools for computing with fractions and decimals from among mental computation, estimation, calculators or computers, and paper and pencil, depending on the situation, and apply the selected methods

**Teacher Preparation and Notes**

- To download the student worksheet, go to [education.ti.com/exchange/sng](http://education.ti.com/exchange/sng)



**This activity utilizes MathPrint™ functionality and includes screen captures taken from the TI-84 Plus C Silver Edition. It is also appropriate for use with the TI-83 Plus, TI-84 Plus, and TI-84 Plus Silver Edition but slight variances may be found within the directions.**

**Compatible Devices:**

- TI-84 Plus Family
- TI-84 Plus C Silver Edition

**Associated Materials:**

- The\_Same\_Name\_Game\_Student.pdf
- The\_Same\_Name\_Game\_Student.doc

**Tech Tips:**

- Access free tutorials at <http://education.ti.com/calculators/pd/US/Online-Learning/Tutorials>
- Any required calculator files can be distributed to students via handheld-to-handheld transfer.

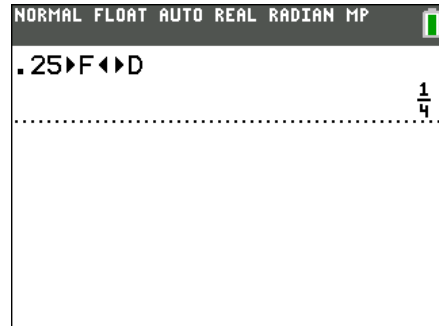
### Part 1 – The Same Name Game

Students first explore finding equivalent fractions to a given decimal.

#### Questions 1-4

You may want to give students an opportunity to discuss with a partner a strategy for finding equivalent fractions.

Students can convert the given decimal to a fraction using the  $\boxed{\text{ALPHA}}$   $\boxed{\text{F1}}$   $\boxed{4}$  feature.



The MODE screen should be set to MATHPRINT; FRACTION TYPE: n/d and ANSWERS: AUTO as shown.



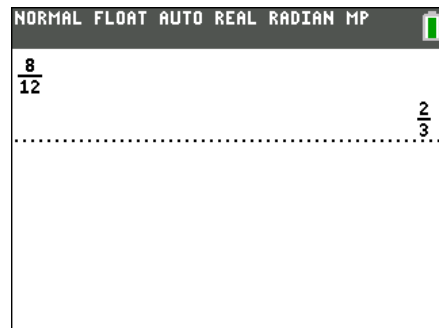
#### Discussion Questions:

- How could all these numbers represent the same value?
- Tell a story that would require one number, such as  $\frac{3}{12}$  rather than another, such as  $\frac{1}{4}$ . (e.g. I dropped a dozen eggs and broke 3 of them; I have 4 people in my family and 1 of them is a boy.)
- How many equivalent fractions can you write for a given number?
- What method do you use to find an equivalent fraction?

#### Questions 6-7

Students can enter each fraction and press  $\boxed{\text{ENTER}}$  to simplify to see which are equivalent.

The key presses for the problem to the right are  $\boxed{\text{ALPHA}}$   $\boxed{\text{F1}}$   $\boxed{\text{ENTER}}$   $\boxed{8}$   $\boxed{\blacktriangleright}$   $\boxed{1}$   $\boxed{2}$   $\boxed{\text{ENTER}}$ .



**Part 2 – Greater Than or Less Than**Questions 8-13

Again, multiplication and/or simplification can be used to help students find fractions that meet the given criteria. Students may want to pick a fraction and then test it to see if it fits the given criteria. They may find it easier to pick a decimal between the given decimals and then convert it to a fraction.

**Part 3 – Visually Find Equivalent Fractions**Questions 14-16

Students should find ways to divide the rectangle into other equivalent “sections”. If there are 12 sections, help them see that there are also 4 smaller sections that are equivalent sizes.



### Solutions – Student Worksheet

#### Part 1

1–4. Answers will vary. Students should find fractions that are equivalent to the given fraction.

5. With a partner, write two different stories that use two equivalent fractions. Explain why the different fractions make more sense in your story.

**Answer: Answers will vary. Stories should reflect the reason to have different equivalent fractions, making it easier to communicate the portion of the whole.**

6.  $\frac{1}{2}, \frac{2}{3}, \frac{8}{16}, \frac{4}{9}, \frac{8}{12}, \frac{10}{20}, \frac{12}{27}, \frac{10}{15}, \frac{30}{45}, \frac{4}{6}, \frac{20}{45}$

Group 1:  $\frac{1}{2}, \frac{8}{16}, \frac{10}{20}$

Group 2:  $\frac{2}{3}, \frac{8}{12}, \frac{10}{15}, \frac{30}{45}, \frac{4}{6}$

Group 3:  $\frac{4}{9}, \frac{12}{27}, \frac{20}{45}$

7. Group 1:  $\frac{1}{3}, \frac{6}{18}, \frac{5}{15}, \frac{2}{6}$

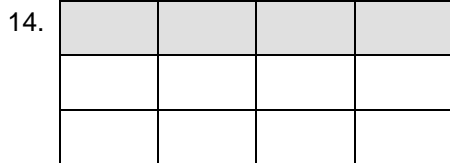
Group 2:  $\frac{2}{7}, \frac{6}{21}, \frac{4}{14}$

Group 3:  $\frac{3}{5}, \frac{6}{10}, \frac{12}{20}, \frac{15}{25}$

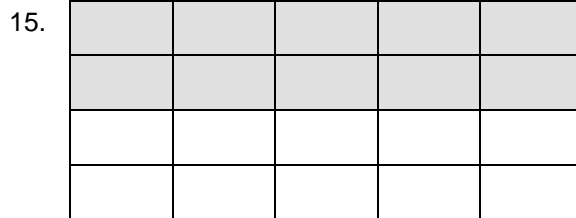
#### Part 2

8–13. Answers will vary. Any given answers should meet the given criteria.

#### Part 3

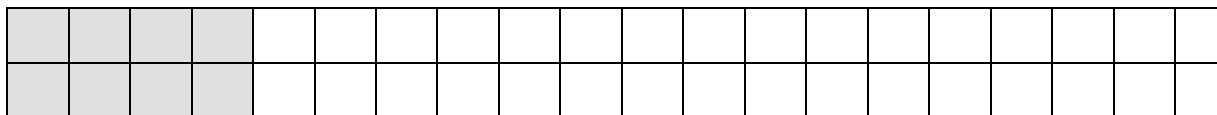


Answer:  $\frac{1}{3}$  and  $\frac{2}{6}$



Answer:  $\frac{10}{20}$  and  $\frac{1}{2}$  and  $\frac{2}{4}$

16.



Answer:  $\frac{8}{40}$  and  $\frac{1}{5}$  and  $\frac{4}{20}$